

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A gas sensing element comprising:
a solid electrolytic substrate having oxygen ion conductivity;
a measured gas side electrode provided on a surface of said solid electrolytic substrate so as to be exposed to a measured gas;
a reference gas side electrode provided on another surface of said solid electrolytic substrate so as to be exposed to a reference gas; and
a porous electrode protecting layer covering said measured gas side electrode,
wherein a limit current density of said electrode protecting layer is in a range from 0.04 mA/mm² to 0.15 mA/mm² on a unit area of said reference gas side electrode under the following conditions:
an oxygen concentration in said measured gas is 0.1%, a measurement temperature and an element temperature (an element surface temperature at the measured gas side of a sensing portion) are not less than 600°C, and a voltage applied between the measured gas side electrode and said reference gas side electrode is 0.5V (i.e., an oxygen pumping in the direction from the measured gas side to the reference gas side).
2. (new) The gas sensing element in accordance with claim 1, wherein said solid electrolytic substrate and said electrode protecting layer are integrated into a lamination body.
3. (new) The gas sensing element in accordance with claim 1, wherein said solid electrolytic substrate and said electrode protecting layer are sintered together.

4. (new) The gas sensing element in accordance with claim 1, wherein said solid electrolytic substrate and said electrode protecting layer are integrated into a lamination body and then sintered together.

5. (new) The gas sensing element in accordance with claim 1, further comprising a heater.

6. (new) The gas sensing element in accordance with claim 5, wherein said heater comprises an insulating substrate and a heater substrate having a heater element provided on a surface thereof.

7. (new) The gas sensing element in accordance with claim 5, wherein a reference gas chamber is defined between said solid electrolytic substrate and said heater.

8. (new) A gas sensing element in accordance with claim 7, further comprising a spacer disposed between said heater and said solid electrolytic substrate and defining a peripheral wall of said reference gas chamber.

9. (new) The gas sensing element in accordance with claim 1, wherein a gas permeation rate of said detecting layer is 0.03cm/sec•atm to 1.5cm/sec•atm.

10. (new) The gas sensing element in accordance with claim 1, wherein a thickness of said electrode protecting layer is in a range from 100 μm to 250 μm .

11. (new) The gas sensing element in accordance with claim 1, wherein the electrode protecting layer has a thickness of 160 μm and an average pore diameter of 2,600 \AA and a permeation rate of 0.03cm/sec•atm.